CHAPTER 1

INTRODUCTION

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Commercial forests occupy more than 61 percent or 15.4 million acres of land in Virginia. Forest ownership is predominated by nonindustrial private ownership at 77 percent; forest industry owns 10 percent; and the remaining 13 percent is held by public agencies.

Forestry annually contributes more than $11.5 billion to Virginia's economy. If Virginia is to thrive economically, the forests' ability to produce goods and services along with their harvest ability must be sustained.

Forest management programs and operations should incorporate adequate measures to provide for proper soil and water conservation. Most streams originating in or flowing through our timberlands are sources for water supplies, recreation, and a wealth of other uses.

Purpose

This manual is prepared to inform and educate forest landowners and the professional forest community on the proper Best Management Practices (BMP) use, its specific purpose, and technical specifications for installation. BMPs are proven methods used to protect water and site quality.

What is Nonpoint Source Pollution?

Nonpoint source pollution is generated from land runoff resulting from precipitation. As the runoff moves over the land surface, it picks up and carries away natural and manmade pollutants and deposits them into waterways, wetlands and ground water. Human activity can dramatically increase nonpoint source pollution potential.

There can be five types of water pollutants resulting from silvicultural activities. They are:

1. Sediment
2. Nutrients
3. Organics
4. Temperature
5. Chemicals

Silvicultural activities that have the greatest chance of causing nonpoint source pollution include:

1. Forest road construction, including stream crossings;
2. Forest harvesting activities, including skidding and processing timber;
3. Site preparation;
4. Pesticide application; and
5. Wildfire control lines and prescribed fire use.

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Of all the listed silvicultural activities, road construction is generally considered to have the greatest potential to increase nonpoint source pollution and, subsequently, to degrade water quality. This potential impact is dependent on slope, soil type, area affected, and intensity of activity.

Why is nonpoint source pollution important to us?

Abundant clean water is important to all citizens of the Commonwealth. Excessive runoff can increase sedimentation to streams. Increased sedimentation raises filtering costs for drinking water, increases flood potential by filling up streambeds, and chokes irrigation systems. Fish habitats can be altered by improper management activities. Removing shade from critical riparian or streamside areas can increase water temperatures, thus affecting fish and other aquatic life. The entire food chain in and near streams can be affected and damaged by land management activity. BMPs can reduce their impact.

Best Management Practices – What are they and why are they important?

BMPs are practices chosen to reduce erosion and prevent or control pollution resulting from forestry operations. BMPs have been in existence for many years in the areas of forestry, agriculture, and urban development. Forestry BMPs are directed primarily to control erosion. Erosion can lead to sedimentation, which is the entry of soil into waterways. BMPs are proven methods to lessen the potential damage from land-disturbing activities.

Using this Manual

This guidance manual is organized according to broad categories of forestry operations where the forest manager needs to recognize appropriate Best Management Practices. The broad topics will describe useful BMPs and techniques to minimize pollution from the forestry operation. The back of the manual contains an appendix of standards and specifications for each BMP. *The manual will not replace on-the-ground recommendations by a qualified professional forester or resource professional and should not be used as a substitute.* Forest operators should always consult a professional for solutions to difficult on-the-ground problems. *Alternative methods that achieve equal water quality protection are acceptable.*

Appendices

Appendix A – BMP Specifications. Provides detailed information on each BMP, where it is to be used, design specifications, and any planning considerations.

Appendix B – Planning Tools. Provides guidance on the use of various planning tools such as slope determination, use of aerial photographs, use of soil maps, evaluation of topographic maps, and methods useful in determination of drainage areas.

Appendix C – Road Surface Area. Provides tables useful in determining road surface area, determining road surface material requirements, and the use of geotextile fabrics.

Appendix D – Revegetation of disturbed areas. Focuses on the stabilization of disturbed or bare soil areas following forestry operations.

Appendix E – Agency Listing. A listing of natural resources agencies that may provide technical assistance with any situations not provided for by this guidance manual.

What happens when water quality is degraded?

If a silvicultural activity is negatively affecting water quality, the logger, landowner and timber buyer are all liable and each may be required to correct the problem. In July of 1993, the Virginia Department of Forestry was given the responsibility to inspect harvesting operations for water quality degradation. The Department, through this legislation, has the authority to do the following:

1. Recommend corrective action;
2. Stop harvesting; and
3. Initiate civil penalties.

Forest industry and forest consultants that monitor compliance with this legislation have adopted the Department's inspection program. Any questions regarding this law should be directed to your local Department of Forestry office.

Please see Chapter 10, Regulations and Legislation Pertaining to Water Quality and Forestry in Virginia.

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